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EXAMINER	
CHANKONG, DOHM	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/844,856	GARCIA-LUNA-ACEVES ET AL.	
	Examiner	Art Unit	
	DOHM CHANKONG	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 11-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-9, and 11-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to Applicant's amendment and arguments filed on 2/26/2009. Claims 1, 7, and 9 are amended. Claims 2 and 10 were previously cancelled. Accordingly, claims 1, 3-9, and 11-14 are presented for further examination.

2. This action is a final rejection.

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 3-6 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments with respect to claims 7-9 and 11-14 have been considered but are not persuasive. The amendment to apparatus claims 7 and 9 do not affect the scope of the claims because they do not structurally differentiate the claimed invention over the prior art.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *See MPEP § 2114* (citing *In re Schreiber*, 128 F.3d 1473, 1477-78 (Fed. Cir. 1997)). More particularly, "a claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim." *Id* (citing *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Applicant's claims 7 and 9 are interpreted as apparatus claims. The amendment to these claims recites "wherein the routers communicate to each other the type-of-service distance to the

address of the client." Applicant should also note that one example of claim language that may raise a question as to the limiting effect of the language in a claim is "wherein" clauses. *MPEP § 2111.04*. The amendment merely attempts to differentiate the claimed information object repository and network from the cited prior art by functional claim language. The amendment does not in any way affect the structure of those claimed apparatuses.

This principle can be clearly seen in claim 7 which is directed to an information object repository but the limitation is directed to the functionality of routers external to the repository. Those routers are obviously not part of the claimed repository and therefore they cannot affect the repository's structure. Thus, the limitation cannot limit the scope of the claimed repository. Similar reasoning applies to claim 9 which is directed to a network that comprises a client and repository. For the foregoing reasons, the rejection of claims 7-9 and 11-14 as set forth in the previous office action are maintained.

To overcome these issues, Applicant should amend the claims in manner that changes the structure of the claimed apparatuses. For example, Applicant may consider amending the network of claim 9 to include web routers that comprise storage means for storing the type-of-service distances of the neighboring routers to the address of the client. This limitation would change the structure of the network because it would require a router and a storage means that contains the distance information of the other routers.

Claim Interpretation

4. Applicant's independent claims recite a WILD protocol that runs on top of a Transmission Control Protocol. Because Applicant's specification does not describe the WILD

protocol but instead references provisional application 60|200401, Applicant's WILD protocol is interpreted consistent with that provisional application. The provisional describes a protocol that determines "distance" between network devices using metrics such as average delay, average processing delay, reliability of path, and availability of the path [pgs. 12-13].

McCanne (USP 6415323) describes using a local monitoring protocol to map a client to another information object repository by utilizing the protocol to determine the candidate service node based on load and availability information; this functionality corresponds to the claimed WILD protocol [column 16 «lines 13-17»]. The monitoring protocol keeps track of various metrics such as availability of the path [column 17 «lines 48-58»]. McCanne describes selecting a network device that has the best network characteristics and therefore is the "closest" to the ARN. Thus, McCanne's local monitoring protocol is interpreted as Applicant's claimed WILD protocol. The McCanne reference discloses the same technology as McCanne and therefore the above discussion applies with equal force to McCanne. McCanne refers to CDNs which correspond to McCanne's ARNs as the CDNs perform the same functionality.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 3-6 are rejected under 35 U.S.C § 102(e) as being anticipated by McCanne et al, U.S Patent No. 6.785.704 ["McCanne"], in view of Partridge et al, "Host Anycasting Service" ["Partridge"], in further view of Grove et al, U.S. Patent No. 6.820.133 ["Grove"], in further view of Kavak et al, U.S. Patent No. 6.687.731 ["Kavak"].

6. The examiner cited Kavak in the PTO-892 filed on 8/17/2004.

7. As to claim 1, McCanne as modified by Partridge, Grove, and Kavak discloses a method, comprising:

receiving, at an information object repository, a request for an information object at an address identified by a uniform resource locator (URL) [column 23 «lines 14-17» | column 25 «lines 57-66» where : McCanne's cache corresponds to a repository]; and

mapping the URL to a corresponding anycast address for the information object [column 23 «lines 14-17 and 56-60» | column 26 «lines 25-27» where : the cache resolves the URL to an anycast address for the web servers that have the requested content], wherein the information object repository is selected according to specified performance metrics by mapping an address of the client to one or more addresses of the information object repositories wherein the mapping is performed by executing a Web Information Locator by Distance (WILD) protocol that runs on top of a transmission control protocol (TCP) [Figure 18 : McCanne's invention running on top of TCP/IP | column 27 «lines 1-13» | also see the response to Applicant's arguments above];

determining whether the anycast address can be resolved into a real unicast address that is uniquely identified for the information object in the Internet [column 20 «lines 21-37»];

resolving the anycast address for the information object to the unicast address for the information object, if the corresponding anycast address can be resolved into the unicast address [column 20 «lines 21-37» | column 21 «lines 9-16» | column 23 «lines 54-67»];

returning a failure if the anycast address cannot be resolved into the unicast address [column 14 «lines 46-54» | McCanne does not explicitly disclose returning a failure but he does disclose relying on DNS. It is well known in the art that if a DNS is unable to resolve addresses, the DNS server will return an error to the requesting client. Thus, one of ordinary skill in the art would have reasonably inferred this functionality into McCanne's DNS servers as well]; and

obtaining a copy of the information object at the corresponding unicast address [column 23 «lines 54-67»].

McCanne, however, does not expressly disclose three claimed features: (1) the resolving of the anycast address comprising sending an anycast resolution query to the anycast address according to an anycast resolution protocol; (2) mapping an address of the client to one or more addresses of routers that have a best type-of service distance to the address of the client by executing a WILD communication protocol between the routers; and (3) wherein the routers communicate to each other the type-of-service distance to the address of the client. However, all three features were well known in the art at the time of Applicant's invention.

As to (1), Partridge is directed towards an internet anycasting service for IP [pg. 1, abstract]. Partridge discloses a DNS resolver resolving an anycast address by sending a request (query) to the anycast address [pg. 2, ¶1 : "DNS resolvers…could send a query to a well known DNS anycast address | pg. 3, ¶2 : "…send DNS queries to the DNS anycast address"]. It would have been obvious to one of ordinary skill in the art to incorporate Partridge's anycast address

protocol into McCanne's anycast system. Partridge's teachings provide would improve McCanne's system by enabling DNS resolvers to properly resolve anycast addresses by sending queries to anycast addresses.

As to (2), Grove is directed to a method for increasing the performance of network traffic over the Internet [abstract]. To achieve this goal, Grove utilizes a mapping feature that maps an address of a client to an information object repository using anycast [Figure 11 | column 19 «lines 15-37» where : Grove's server's read on the claimed information object repository] as well as mapping the client's address to a router address that has a best type-of service distance to the client's address [column 32 «lines 41-53» where : Grove's c-node reads on the claimed router since the c-node connects the client to the object repository].

Grove further discloses that his c-nodes execute a protocol between the c-nodes to determine the best distance between the c-nodes and the clients [column 5 «lines 59-62» | column 7 «lines 45-51»]. It would have been obvious to one of ordinary skill in the art to have modified McCanne's anycast system with Grove's mapping features. Grove's features improve on McCanne's system by mapping the client to both the repository as well as the routers within the network which improve the network's performance by selecting the most efficient network path [see Grove, column 7 «lines 45-51»].

Finally, as to (3), Kavak is directed to a invention for load-sharing a plurality of servers that belong to an anycast group [abstract]. Like McCanne, Kavak is interested in selecting the a repository closest to a requesting client [column 2 «lines 1-3»]. Kavak further discloses routers that communicate to other routers distance information between the servers and the clients in

order to select the nearest server [column 5 «lines 12-26»: Kavak discloses each router maintaining distance values to a server and forwarding this information to its neighbors].

It would have been obvious to one of ordinary skill in the art to have modified McCanne's system to include the distance sharing functionality taught by Kavak. Such a modification is an example of applying a known technique (Kavak's routers forwarding distance information to neighboring routers) to a known system (McCanne's anycast system) ready for improvement to yield predictable results (McCanne's routers now share distance information with other another to have a more complete view of the network). *See MPEP § 2143*.

8. As to claim 3, McCanne as modified by Partridge, Grove, and Kavak discloses the method of claim 1 further comprising sending the information object to the client [column 23 «lines 14-23 and 54-63»].

9. As to claim 4, McCanne as modified by Partridge, Grove, and Kavak discloses the method of claim 3 wherein the request is received at an information object repository that is topologically closer to the client than any other information object repository [column 13 «line 45»].

10. As to claim 5, McCanne as modified by Partridge, Grove, and Kavak discloses the method of claim 4 wherein the information object repository is selected according to specified performance metrics [column 21 «lines 58-62»].

11. As to claim 6, McCanne as modified by Partridge, Grove, and Kavak discloses the method of claim 5 wherein the performance metrics comprise one or more of: average delay from the selected information object repository to a source of the request, average processing delay at the selected information object repository, reliability of a path from the selected information object repository, available bandwidth in said path, and loads on the selected information object repository [column 21 «lines 58-62»].

12. Claims 7-9, 11, 13, and 14 are rejected under 35 U.S.C § 102(e) as being anticipated by McCanne, in view of Partridge, in further view of Grove.

13. As indicated in the response to arguments section above, the limitation "wherein the routers communicate to each other the type-of-service distance to the address of the client" is merely a functional limitation and therefore does not affect the scope of the claim. *See also MPEP § 2111.04* ("Claim scope is not limited...by claim language that does not limit a claim to a particular structure").

14. As to claim 7, McCanne discloses an information object repository configured to map a uniform resource locator (URL) for an information object to a corresponding anycast address [column 23 «lines 14-17 and 56-60» | column 26 «lines 25-27» where : the cache resolves the URL to an anycast address for the web servers that have the requested content], wherein the information object repository is selected according to specified performance metrics by mapping an address of the client to one or more addresses of the information object repositories wherein

the mapping the address of the client to the one or more addresses of information object repositories and to the one or more addresses of routers is performed by executing a Web Information Locator by Distance (WILD) protocol that runs on top of a transmission control protocol (TCP) [Figure 18 : McCanne's invention running on top of TCP/IP | column 27 «lines 1-13» | also see the response to Applicant's arguments above]; to determine whether the anycast address can be resolved into a real unicast address that is uniquely identified for the information object in the Internet [column 20 «lines 21-37»], to resolve the anycast address for the information object to the unicast address for the information object, if the corresponding anycast address can be resolved into the unicast address [column 20 «lines 21-37» | column 21 «lines 9-16» | column 23 «lines 54-67»], to return a failure if the anycast address cannot be resolved into the unicast address [column 14 «lines 46-54» | McCanne does not explicitly disclose returning a failure but he does disclose relying on DNS. It is well known in the art that if a DNS is unable to resolve addresses, the DNS server will return an error to the requesting client. Thus, one of ordinary skill in the art would have reasonably inferred this functionality into McCanne's DNS servers as well]; and to obtain a copy of the information object at the corresponding unicast address [column 23 «lines 54-67»].

McCanne, however, does not expressly disclose (1) the resolving of the anycast address comprising sending an anycast resolution query to the anycast address according to an anycast resolution protocol nor does he disclose (2) mapping an address of the client to one or more addresses of routers that have a best type-of service distance to the address of the client by executing a WILD communication protocol between the routers. However, both features were well known in the art at the time of Applicant's invention.

As to (1), Partridge is directed towards an internet anycasting service for IP [pg. 1, abstract]. Partridge discloses a DNS resolver resolving an anycast address by sending a request (query) to the anycast address [pg. 2, ¶1 : "DNS resolvers…could send a query to a well known DNS anycast address | pg. 3, ¶2 : "…send DNS queries to the DNS anycast address"]. It would have been obvious to one of ordinary skill in the art to incorporate Partridge's anycast address protocol into McCanne's anycast system. Partridge's teachings provide would improve McCanne's system by enabling DNS resolvers to properly resolve anycast addresses by sending queries to anycast addresses.

As to (2), Grove is directed to a method for increasing the performance of network traffic over the Internet [abstract]. To achieve this goal, Grove utilizes a mapping feature that maps an address of a client to an information object repository using anycast [Figure 11 | column 19 «lines 15-37» where : Grove's server's read on the claimed information object repository] as well as mapping the client's address to a router address that has a best type-of service distance to the client's address [column 32 «lines 41-53» where : Grove's c-node reads on the claimed router since the c-node connects the client to the object repository]. Grove further discloses that his c-nodes execute a protocol between the c-nodes to determine the best distance between the c-nodes and the clients [column 5 «lines 59-62» | column 7 «lines 45-51»]. It would have been obvious to one of ordinary skill in the art to have modified McCanne's anycast system with Grove's mapping features. Grove's features improve on McCanne's system by mapping the client to both the repository as well as the routers within the network which improve the network's performance by selecting the most efficient network path [see Grove, column 7 «lines 45-51»].

15. As to claim 8, McCanne as modified by Partridge and Grove discloses the information object repository of claim 8 being further configured to advertise the anycast address using a network layer anycast routing protocol [column 15 «lines 9-14»].

16. Claims 9 and 11 are claims to for a network with elements that perform the steps of the method of claims 1 and 4 respectively. Therefore, claims 9 and 11 are rejected for the same reasons as set forth for claims 1 and 4, above.

17. Claim 13 is a claim for a network with an element that performs the step of the method of claim 5. Therefore, claim 13 is rejected for the same reasons as set forth for claim 5.

18. Claim 14 is a claim for a network with an element that performs the step of the method of claim 6. Therefore, claim 14 is rejected for at least the same reasons set forth for claim 6.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday-Friday [8:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571.272.3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dohm Chankong/
Primary Examiner, Art Unit 2452